# Indian Health Diabetes Best Practice
# Foot Care

Revised July 2009

Indian Health Service
Division of Diabetes Treatment and Prevention
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# Best Practice Guidelines

## What is diabetes foot care?

People with diabetes have special issues with their feet. Diabetes can cause nerve damage that reduces sensation in the feet and blood flow to the feet and legs. This can make it harder for open wounds to heal. For these reasons, foot care is an essential element of a diabetes program.

## Why is foot care important?

Foot ulcers and amputations are a major cause of complications and disability for people with diabetes; however, they are among the most common *preventable* problems. Consider these facts:

- Approximately 40% of patients with diabetes will develop peripheral neuropathy.
- Approximately 20% of patients with diabetes have acute foot problems when they come in for a routine clinical exam.
- Nearly 15% of patients with diabetes will develop foot ulcers during their lifetime.
- Up to 85% of amputations are preceded by foot ulcers (Rathur, 2007).

Most foot and lower limb amputations begin as foot ulcers. Between 5% and 15% of patients who develop diabetic foot ulcers will experience an amputation in their lifetime.

The benefit of implementing this best practice is that more than half of diabetes foot complications are preventable through primary care interventions.

There are no potential risks of implementing the recommendations provided in this best practice.

## Key Recommendations

| Key Recommendations |
| --- |
| Educate and instruct patients on the importance of proper foot care. |
| Conduct a comprehensive annual foot exam in all patients with diabetes to identify risk factors predictive of ulcers and amputations. |
| Provide podiatry care and recognize when to refer. |
| Develop a mechanism for providing appropriate footwear. |
| Assess, classify, and manage foot ulcers. |
| Develop clear mechanisms for referring patients to home care, field health workers, podiatry care, footwear specialists, vascular assessment, and surgical consultation. |
| Develop a team approach to diabetes care to include foot care. |
| Train field health personnel in foot risk assessment and risk-specific foot care education. |
| Include specific foot outcome measures in annual performance-based objectives. |

## Scope and Purpose

This best practice describes foot care guidelines for clinical providers caring for persons with type 1 or type 2 diabetes. The target population to be covered by this best practice is persons with type 1 or type 2 diabetes.

Questions addressed include:

1. Is foot care important in a person with diabetes?
2. What can be done to decrease the chance of foot complications?
3. How can an organization improve its foot care delivery system?
4. What is the importance of community health workers in foot care?
5. How can an organization and community know that it is providing optimal health services to individuals with diabetes?

6. How can an organization measure predict outcomes associated with a diabetic foot care program?

The overall objectives of this diabetes foot care best practice are:

1. List four risk factors for diabetic foot complications.
2. Be able to conduct a comprehensive diabetic foot examination.
3. List three interventions associated with decreased risk for foot complications.
4. State four educational objectives for patients at high risk for foot complications.

The intended users of this best practice are:

- primary health and foot care teams
- community workers who provide foot care education, evaluation, and treatment
- leaders of health care organizations, and
- caregivers and people living with diabetes.

This document provides guidance for programs that seek to improve an individual's health status and enhance delivery of effective foot care. There are three fundamental questions to address as you plan and implement your best practice. These questions are:

1. **What are you trying to accomplish by implementing this best practice?**
2. **How will you know if what you do makes things better?**
3. **What can you do to make things better?**

See Appendix A for sample answers to these questions specifically related to foot care.

# Monitoring Progress and Outcomes

If a program performs podiatry care and has referral mechanisms in place such that they are considered to be a comprehensive foot care program, the two most important treatment measures are foot ulceration and amputation rates.

## Key Measures

| **Key Measures for Monitoring Progress and Outcomes** |
|---|
| The following measures are of primary importance:<br><br>1. Percentage of diabetes patients with documented foot exams in the past twelve months.<br><br>2. Percentage of diabetes patients with documented risk-appropriate foot care education in the past twelve months. |

# Clinical Recommendations

Clinical recommendations for foot care are provided for two categories of patients:

- people at risk for diabetes-related foot complications, and
- people with diabetes-related foot disorders.

## Provider Recommendations for *People at Risk for Diabetes-related Complications*

### 1. Educate patients on foot care.

***Why?***

Foot care education has been associated with a 40–80% reduction in ulceration and amputation.

The goals and content of the education for *low risk* patients are:

- directing patient education at controlling blood glucose, blood pressure, and lipids, to prevent neuropathy and peripheral vascular disease (PVD), and

- tobacco cessation for those who use tobacco.

**Table 1. Education and Treatment Objectives for All Patients With Diabetes**

| Evidence-based Education and Treatment Objectives for All Patients With Diabetes – Low Risk and High Risk |
|---|
| • controlling glucose<br>• controlling blood pressure<br>• controlling lipids, and<br>• smoking cessation. |

The goal and content for *high risk* patients should address:

- Wash and inspect feet on a daily basis. Patients should be instructed to wash feet daily with soap and water, and inspect for redness, cracking, and sores. If feet are dry before washing, apply a moisturizing lotion after washing. If it is difficult for the patient to reach or see the feet, enlist a family member or caregiver to assist with washing, moisturizing, and inspection.

- Clear all walking areas of dangerous objects. *Minor foot trauma from bumping into objects is the most common event leading to foot ulcers.* This often happens when someone is getting out of bed in the dark to go to the bathroom, and can be prevented by using nightlights and providing a clear path.

- Select and use appropriate and properly fitted footwear. (See section 4)

- Use slippers indoors (i.e., no bare feet).

- Provide proper nail and callus care (i.e., no bathroom surgery).

- Avoid extreme temperatures; patients with neuropathy can be unaware of thermal injury.

- Avoid soaking feet. Patients with neuropathy may have impaired sweat gland function and dry feet. This can lead to fissures and cracking of the skin.

- Promptly report problems such as infections, ulcers, and cuts that do not heal. Advise the patient who to call and when to call. Superficial cuts, scratches, and blisters that do not heal in three days should be evaluated by a nurse or primary care provider. Deep cuts and any wounds with redness, drainage, swelling, pain or dark discoloration should be reported promptly to a primary care provider and evaluated the same day.

**Table 2. Foot Care Education Objectives for Patients With Diabetes and High Risk Feet**

| Evidence-based Foot Care Education Objectives for Patients With Diabetes and High Risk Feet |
|---|
| • daily washing and inspection<br>• keeping walking areas clear of dangerous objects<br>• appropriate footwear (selection, fitting, and use)<br>• using slippers indoors—no bare feet<br>• proper nail and callous care—no bathroom surgery<br>• avoiding extreme temperatures<br>• avoiding soaking, and<br>• reporting foot problems promptly (infections, ulcers, and cuts that do not heal). |

***How?***

A. Offer annual foot care self-management education and reinforce this education during follow-up visits.

B. Base the goals and content of foot care education on the patient's risk status as summarized above.

## 2. Conduct a comprehensive annual foot examination in all patients with diabetes regardless of risk status.

### *Why?*

Early recognition and management of independent risk factors for foot ulcers and amputations can prevent or delay the onset of adverse outcomes.

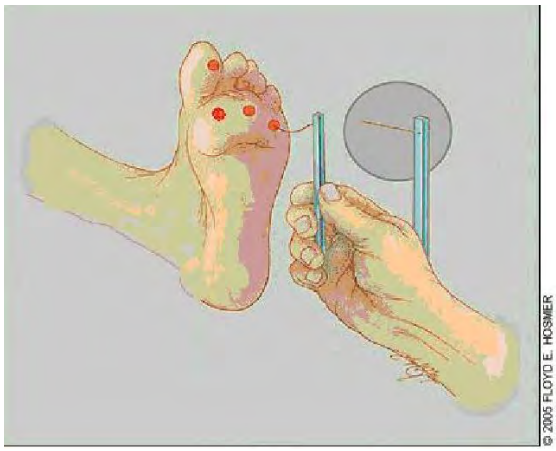
**Table 3. Simple Criteria to Identify High Risk Feet in People with Diabetes**

| Simple Criteria to Identify High Risk Feet in People with Diabetes |
|---|
| • insensate to ten-gram monofilament* testing<br>• foot deformity is present<br>• prior ulcer or amputation, and<br>• absent pulse or abnormal ankle-brachial index (ABI) pressure. |
| * Consider additional sensory testing to the monofilament. Most experts agree that a reliable screening test should detect at least 90% of people at risk, or have a sensitivity ≥ 90%. Prospective studies have shown that monofilament testing has a sensitivity of 63-86% for detecting those who will develop a foot ulcer, and this is below a reliable screening threshold. Accordingly, the American Diabetes Association recommends supplementing the monofilament sensory examination with at least one other test including 128 Hz tuning fork, ankle reflex, vibration perception threshold, pin prick and/or proprioception. The 128-Hz tuning fork is probably the most cost effective of these five supplemental tests, but combinations of these tests have not been evaluated prospectively. A rational approach may be to use a 128 Hz tuning fork exam in patients who are sensate to the monofilament to help identify additional patients at high risk. The IHS considers these other tests optional because when the monofilament exam is combined with the other simple criteria of deformity and history of ulcer/LEA, the sensitivity is 90% (specificity 70%). (N Eng J Med, 1995;322:269-70). |

### *How?*

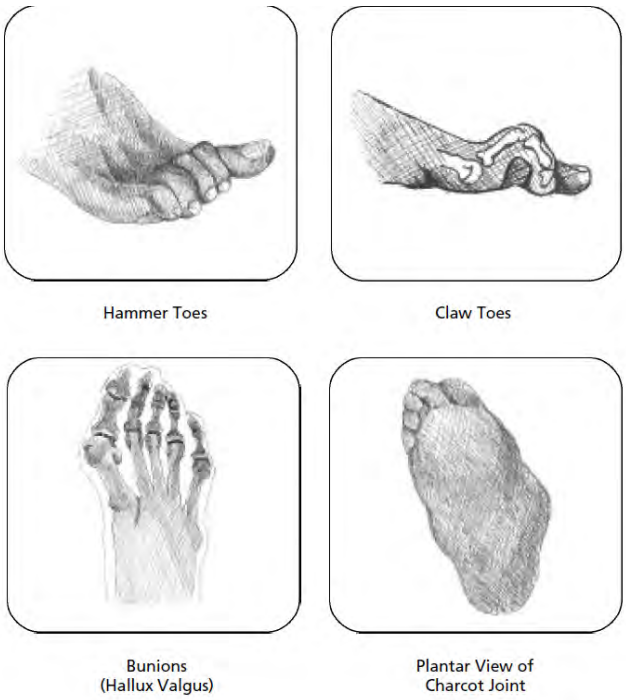
A. Test for “protective sensation” with a ten-gram (5.07) monofilament on the plantar aspect of the first, third, and fifth digits and metatarsal heads of each foot. If the patient has no sensation on one or more of the tested sites, he or she is at high risk of developing an ulcer.

   - Press perpendicular to point of bending, hold one second and release. (Demonstrate procedure first on patient’s hand.) See the pictures on the following page.




- Patient closes eyes and acknowledges sensation of pressure with a “yes.”
- Test both feet, four sites each: great toe and first, third and fifth metatarsal heads (not heel or dorsum).
- Insensate in one or more areas confers risk.

B. Inspect the foot for deformities and altered biomechanics including hammer or claw toe deformities, bunions, Charcot foot, any bony prominences, and excessive pronation or supination (see drawings below). The patient is at high risk of developing an ulcer if he or she has any of these.




Source: *Feet Can Last a Lifetime: A Health Care Provider’s Guide to Preventing Diabetes Foot Problems.* National Diabetes Education Program. November 2002.

C. Conduct a vascular assessment by feeling for dorsalis pedis and posterior tibial pulses on each foot. If one or more of the pulses is absent in either foot, the patient is at high risk of developing an ulcer.

Dorsalis Pedis Pulse

Posterior Tibial Pulse

An audible assessment may help with locating a pulse if not able to palpate. Alternatively, assess vascular status with an ankle-brachial index (ABI). Although commonly cited in medical literature, an ABI is not commonly performed unless the examiner is comfortable with the assessment. An ABI ratio of < 0.9 indicates high risk.

D. Review the chart and ask the patient about prior ulceration or non-traumatic amputations. A history of either event confers high risk of developing an ulcer.

## 3. Provide podiatry care.

***Why?***

Podiatry care in patients with diabetes and high risk feet has been associated with increased self-care knowledge, a 54% reduction in ulceration rates, and a 75% reduction in lower extremity amputation rates.

***How?***

A. Include nail trimming, callus reduction, skin care, and reinforcement of education principles in basic podiatry care.

B. Provide a baseline podiatry assessment, with follow-up care directed by clinical findings for all high risk patients.

C. See patients with sensory loss but otherwise normal feet every six months. Follow-up with patients who have callus and nail deformities every one to three months.

## 4. Provide expertise in footwear modifications to ensure safe ambulation and exercise.

### *Why?*

The use of protective footwear in patients with diabetes and high risk feet has been associated with reduced plantar pressures, reduced callus formation, and reduced ulceration and amputation rates.

### *How?*

A. Match choice of footwear to risk status and identified problems:

- Low risk patients may use standard, commercially available footwear.
- Patients with sensory loss and normal shaped feet may use standard shoes with a stable heel counter and padded insert.
- Patients with moderate deformities should use extra- or super-depth shoes with a custom molded inner-sole (also called a supportive “footbed”).
- Patients with advanced deformity may require custom molded shoes and orthopedic inserts (orthotics).

B. Instruct all high risk patients on footwear selection, fitting, and break-in time. Reassess shoes and orthotics for excessive internal and external wear every three to six months and replace as needed.

## 5. Recognize when to refer patients for vascular assessment and augmentation procedures.

**Table 4. Criteria for Vascular Evaluation of the Foot**

| Criteria for Vascular Evaluation of the Foot |
|---|
| • ulcer with clinical signs of ischemia<br>• non-healing ulcer for more than five weeks<br>• rest pain<br>• nocturnal pain, and<br>• lifestyle-limiting claudication. |

### *Why?*

There is insufficient evidence supporting the use of vascular surgery for ulcer prevention in patients with diabetes.

***How?***

Generally, limit referral for definitive vascular assessment and augmentation procedures in the non-ulcerated diabetic foot to patients with rest pain, night pain, or claudication that limits quality of life.

## Provider Recommendations for *People with Diabetes-related Foot Disorders*

**Table 5. Foot Care Education Objectives for Patients With Diabetes and High Risk Feet**

| Evidence-based Foot Care Education Objectives for Patients With Diabetes and High Risk Feet |
|---|
| • daily washing and inspection<br>• keeping walking areas clear of dangerous objects<br>• appropriate footwear (selection, fitting, and use)<br>• using slippers indoors—no bare feet<br>• proper nail and callous care—no bathroom surgery<br>• avoiding extreme temperatures<br>• avoiding soaking, and<br>• reporting foot problems promptly (infections, ulcers, and cuts that do not heal) |

### 1. Diagnose and treat foot ulcers

A. Assess the ulcer.

***Why?***

Evidence suggests that assessment and active management of wounds reduces the progression to more severe complications up to and including amputations.

***How?***

Begin the management of wounds by assessing the following criteria:

- lower-extremity blood flow
- wound dimensions
- quality of the wound bed and edges
- surrounding erythema and cellulites
- mechanism of injury
- penetration to deep structures, including fascia and bone
- signs of systemic infection (temperature and WBC)
- blood glucose control
- other health risk factors, such as alcohol and tobacco use

- type and amount of drainage, and
- Hct, Hgb, albumin and/or pre-albumin, protein, CBC.

B. Classify the ulcer.

***How?***

Classify the wound as Uncomplicated or Complicated based on the following clinical findings:

**Table 6. Classification of Foot Wounds (Consistent With IDSA Guidelines for Clinical Classification of Diabetic Foot Infection)**

| Characteristic | Uncomplicated | Complicated |
|---|---|---|
| Wound size | ≤ 2 cm (diameter) or ≤ 0.5 cm (deep) | > 2 cm (diameter) or > 0.5 cm (deep) |
| Deep space involved? | No | Yes |
| Margin of erythema | ≤ 2 cm | > 2 cm |
| Systemic infection? | No | Yes |
| Vascular insufficiency? | No | Yes |

C. Manage the ulcer.

***Why?***

Consistent application of evidence-based wound management is associated with improved foot wound outcomes.

***How?***

Manage simple and complex ulcers in accordance with the following general guidelines:

1. Uncomplicated ulcer:
   - Provide debridement as needed and measure the wound.
   - Limit weight-bearing (e.g., bed rest, wheelchair, crutches, healing shoe, and total contact cast).
   - Perform daily dressing changes, using specialized dressing materials as needed.

- Provide an appropriate wound healing environment.

- Use oral antibiotics in the presence of signs and symptoms of infection, after obtaining appropriate wound cultures; avoid surface swabs.

- Reinforce the care plan through patient education.

- Provide home care follow-up every one to three days to assess compliance with the care plan.

- Monitor healing through weekly medical follow-up in the clinic and modify patient's care plan as needed.

2. Complicated ulcer:
   - Provide wide surgical debridement, including cultures of excised tissue or bone.

   - Perform daily post-operative dressing changes, using appropriate dressing materials to provide optimal wound healing environment.

   - Negative pressure wound therapy (NPWT) has been found to be an effective adjunctive modality for treating Complicated and Uncomplicated appropriately-debrided diabetic foot wounds. NPWT can be used on any size wound and has been shown to be especially effective on deep, complicated, non-healing wounds of mixed etiologies. NPWT promotes wound healing by angiogenesis and development of granular tissue in Complicated wounds, including diabetic wounds.

   - Promote strict non-weight bearing with use of crutches, wheelchairs, and bed rest, or off-load the wound with adaptive devices such as total contact cast or wound-healing boots.

   - Optimize metabolic control.

   - Provide parenteral antibiotic therapy for deep space infection (e.g., abscess or osteomyelitis) that is directed by wound culture sensitivity results.

   - Refer patients with signs or symptoms of ischemia to definitive vascular evaluation and treatment.

   - Provide patient education to promote required self-care practices following hospital discharge.

   - Include frequent outpatient visits for wound care and monitoring of progress in the post-hospital care plan; modify plan as needed.

- Consider the patient as high risk for re-ulceration once the foot ulcer has healed. Provide vigilant follow-up with special attention to preventive measures.

### 2. Diagnose and treat neuropathic foot pain.

***Why?***

Neuropathic foot pain is common. It can limit an individual's activity and may be responsive to treatment.

***How?***

A. Non-diabetic etiologies should be excluded.

B. Glycemic control needs to be optimized.

C. Consider non-pharmacological, topical, or physical therapy means for treatment, such as capsaicin or acupuncture.

D. Other pharmacologic options include:
   - Tricyclic drugs (e.g., Amitriptyline 25-150 mg before bed)
   - Anticonvulsants (e.g., Gabapentin, typically titrated up to a dose of 1.5 g total daily)
   - Opiates or opiod-like drugs in selected patients, with appropriate management.

E. If available, consider pain clinic referral (Boulton, 2005).

## Community Recommendations

### Develop clear mechanisms for referring patients to home care, field health workers, podiatry care, footwear specialists, and surgery.

***Why?***

Comprehensive foot care requires services provided outside of the clinic in the community. Clear referral mechanisms to these services have shown to improve quality of foot care and decrease incidence of amputations by 25% (Rith-Najarian, 1998).

***How?***

A. Designate a person/group responsible for ascertaining what is available in the community and engaging community stakeholders who have an interest or ability to interact with patients on education, diagnosis, and treatment.

B. Reinforce specific clinic-community linkages, including:

- **Field health –** Develop referral mechanism and coordinated services for public health nurses, community health representatives (CHRs), and home care personnel. Screening, education, nail care, and wound care can be provided and/or reinforced in the field. Training may be required.

- **Footwear –** Consider conducting an assessment of appropriate footwear that is available in local community stores and compile a list that can be made available to patients. Explore feasibility of outreach clinics by regional specialized footwear vendors (pedorthists).

- **Surgery –** Explore feasibility of outreach clinics by regional wound care and vascular surgery consultants.

- **Podiatry –** If podiatry services are not available at the clinic, explore feasibility of outreach clinics by regional podiatry consultants.

- **Renal dialysis programs –** Patients on dialysis are at extreme risk for foot complications and their care is often divided among local primary care clinics and nephrologists from regional hospitals supporting the local dialysis program. Local primary care staff should meet with their regional counterparts to define patterns of referral for patients with acute foot care problems.

C. Establish written or electronic referral mechanisms to optimize communication among clinic and community programs.

D. Evaluate outcomes regularly and modify referral mechanisms if needed.

# Organization Recommendations

## 1. Develop a diabetes team that includes foot care.

***Why?***

A team-based approach to diabetes care can improve outcomes for the patient.

***How?***

A. Incorporate proper foot care into routine diabetes care.

B. Make podiatry care available on-site or through a referral mechanism that is easy for the patient to use and ensures communication back to the primary care provider.

C. If podiatry services are not available in the facility, establish referral mechanisms and have this information available on the patient's record.

## 2. Cascade clinic foot care objectives into clinic's annual performance plans.

***Why?***

Annual performance plans can provide a roadmap for clinical improvement goals. Appropriate measures should be developed for clinical objectives related to these goals. Cascading these objectives into annual performance plans for employees in the organization responsible for foot care can enhance accountability for achieving improvement goals and serve as a basis for appropriate recognition.

***How?***

A. Use a consensus process of organization and clinic leadership, develop appropriate strategic foot care-related goals for your organization, such as developing a basic foot care program. Then, develop specific process and outcome objectives. For example: In six months, the organization will have a nurse foot care clinic one day a week, and foot exam rates will increase from X to Y% in one year.

B. Negotiate with clinic staff on how changes to their specific roles will help meet these goals; select appropriate objectives and measures to be included in their annual performance evaluations. For example, the nurse selected to run the foot care clinic may set foot care training as a process objective and the process measure would be a certificate of training. An objective for a supply officer might be that podiatry equipment and supplies are ordered and in stock 95% of the time.

C. Decide upon the frequency of evaluation.

D. Include all stakeholders in review of these measures.

E. Continue to evaluate outcomes such that they inform providers and organizational leaders of foot care challenges and successes.

## Evaluating a Foot Care Program

Evaluation is important because it helps you see what is working and what is not working in your foot care program for people with diabetes. It will show you if adjustments or changes are needed in order to improve your program. Evaluation also provides information that you can use to share your successes with patients, providers, Tribal leaders, administrators, the community, funders, and other stakeholders.

Consider including the following data in your evaluation:

- foot exams
- risk-appropriate foot care education
- foot ulceration rates, and
- amputation rates (e.g., major, minor, and first lower extremity amputations).

## Sustaining a Foot Care Program

Often, to reach care goals, programs must be in place for more than a few years. The following are some helpful tips for sustaining your program:

- Bill for podiatry, education, and home care services.
- Obtain third-party reimbursement for footwear.
- Establish contracts with footwear vendors to provide services at Medicare and Medicaid negotiated rates.
- Report your success to the local community through a newsletter that includes educational messages.
- Offer walk-in podiatry and wound care services and make your services user-friendly.
- Have the clinic director establish an “internship” program with the local podiatrist. The podiatrist could train local clinic providers such as nurses or physicians in basic nail, callus, and ulcer care.
- Encourage clinics to become model clinics. Share their expertise through regional workshops and invite other clinics to make site visits to observe the model clinics at work.
- Track and report clinical outcomes and share your successes with the clinic and other providers.
- Establish referral systems with regional wound care centers.

# Tools and Resources

See also Appendixes B through D for clinical practice tools and resources on foot care.

## Web-based Resources

IHS Division of Diabetes Treatment and Prevention. *Creating Strong Diabetes Programs: Plan a Trip to Success.* This 38-page workbook and 1-page Appendix (with online training course) provides guidance on effective program planning and evaluation. [Updated 2009 April 27; cited 2009 June] appendix]. Available from: http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf

IHS Division of Diabetes Treatment and Prevention. *Creating Strong Diabetes Programs: Plan a Trip to Success*. This online training course provides guidance on effective program planning and evaluation. [Internet]. [Updated 2009 July; cited 2009 June] Available from: http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=trainingBasicsCreating

HRSA's Lower Extremity Amputation Prevention (LEAP) program is a comprehensive, 5-step program that can dramatically reduce lower extremity amputation in individuals with decreased sensation in their feet. http://www.hrsa.gov/leap

The National Diabetes Education Program's *Feet Can Last a Lifetime: A Health Care Provider's Guide to Preventing Foot Problems* is a comprehensive guide to foot care that includes a quick-reference card for conducting a foot exam, a monofilament for sensory testing, and templates for waiting room posters and medical record stickers. http://www.ndep.nih.gov/media/Feet_HCGuide.pdf

The California Diabetes Program, a partnership between the California Department of Public Health and the University of California, San Francisco, provides a wealth of information and tools on their website. http://www.caldiabetes.org

## Examples of Current Best Practice Programs

**Alaska Native Medical Center Podiatry Program**
Charles Edwards, DPM
(907) 729-3927
cedwards@anthc.org

The program includes a podiatrist, case manager, certified pedorthist, and the Alaska Native Medical Center diabetes team. The program has demonstrated decreased rates of amputations through its comprehensive program and the data have been published in the *International Journal of Circumpolar Health* (Schraer, 2004).

**Phoenix Indian Medical Center (PIMC)**
Eugene Dannels, DPM
(602) 263-1200
eugene.dannels@ihs.gov

PIMC has vast clinical experience and a comprehensive foot care program.

**Quentin N Burdick Memorial Health Center**
Shirley Butts, RN, BSN Diabetes Nurse Educator
(701) 477-8451
shirley.butts@ihs.gov

The QNBMHC health center, located in Belcourt, North Dakota, has implemented the "Happy Feet Program." This is a comprehensive nurse-managed foot care program in collaboration with the center's clinic diabetes team.
http://www.csc.ihs.gov/docs/OutcomesOfANursingFootCareClinic.pdf

**Red Lake Hospital**
Charmaine Branchaud, RN, CDE
(218) 679-3912
charmaine.branchaud@ihs.gov
Red Lake Hospital has achieved successful outcomes in a primary care setting.

**Urban Inter-Tribal Center of Texas (UITCT)**
Rodney Stapp, DPM, CEO
(214) 941-1050
rodney.stapp@uitct.com

UITCT has successfully implemented shoe and basic foot care awareness programs.

**Whiteriver Indian Hospital**
CAPT Scott Gaustad, PT, CWS, FCCWS, GCS, OCS, SCS, CSCS
(928) 338-3610
scott.gaustad@ihs.gov

CAPT Gaustad, coordinator of the Whiteriver Indian Hospital Wound Care Team, has extensive clinical experience in care of the diabetic foot as well as care of other Complicated and Uncomplicated wounds.

## Additional Contacts

**Area Diabetes Consultants** website:
http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=peopleADC

**Stephen Rith-Najarian, MD**
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# Appendix A

## Improving Foot Care Programs in the Indian Health System

### 1. What are you trying to accomplish by implementing this best practice?

- Improve foot care and services for people with diabetes and at risk of diabetes, to improve foot care outcomes

### 2. How will you know if what you do makes things better?

- Collect and display data on an ongoing basis; analyze the data and use it to plan next steps.

- Improved data results suggest that things are getting better. Examples:

    - Over six months, there is a 15% increase in documented completed foot exams.

    - Within one year, there is a 10% decrease in foot amputations.

### 3. What can you do to make things better?

- Enlist leadership support to improve diabetes foot health care.

- Develop clear mechanisms for referring patients to home care, field health workers, podiatry care, footwear specialists, vascular assessment, and surgical consultation.

- Develop a team approach to diabetes care to include foot care and develop a mechanism to measure the team approach success.

# Appendix B – Diabetes Foot Exam Form

Developed by the Diabetes Coalition of California and the California Diabetes Program, revised August 2008.

For further information: http://www.caldiabetes.org or (916) 552-9888.

# DIABETES FOOT EXAM

Patient Name: _____
Last First MI

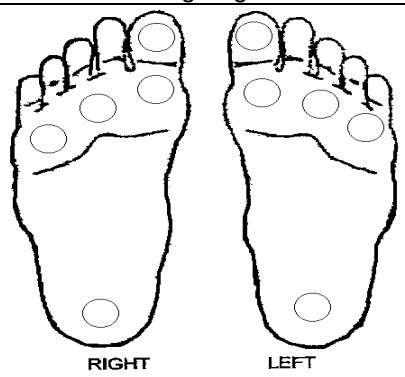
DOB: _____ Medical Record #: _____

**DETAILED FOOT EXAM:** ***Initially and then yearly***

Date:

| Indicate presence (+) or absence (-) in the space below: | | | | | |
|---|---|---|---|---|---|
| | Dorsalis pedis pulse | Posterior tibial pulse | Ulcer (note size if present) | Bony deformity/ Callus | Loss of hair/ Atropic skin |
| Right | | | | | |
| Left | | | | | |

Indicate presence (+) or absence (-) of sensation in 5 areas using 10gm monofilament




Notes:

_____
_____
_____
_____
_____
_____
_____
_____
_____

☐ Education/education materials given

**Provider Signature:** _____

**VISUAL INSPECTION ONLY:** ***at every diabetes care visit***

Date:_____

☐Normal ☐Abnormal; specify_____
☐Education/education materials given
☐No referral ☐Referral to_____

Provider Signature:

Date:_____

☐Normal ☐Abnormal; specify_____
☐Education/education materials given
☐No referral ☐Referral to_____

Provider Signature:

Date:_____

☐Normal ☐Abnormal; specify_____
☐Education/education materials given
☐No referral ☐Referral to_____

Provider Signature:

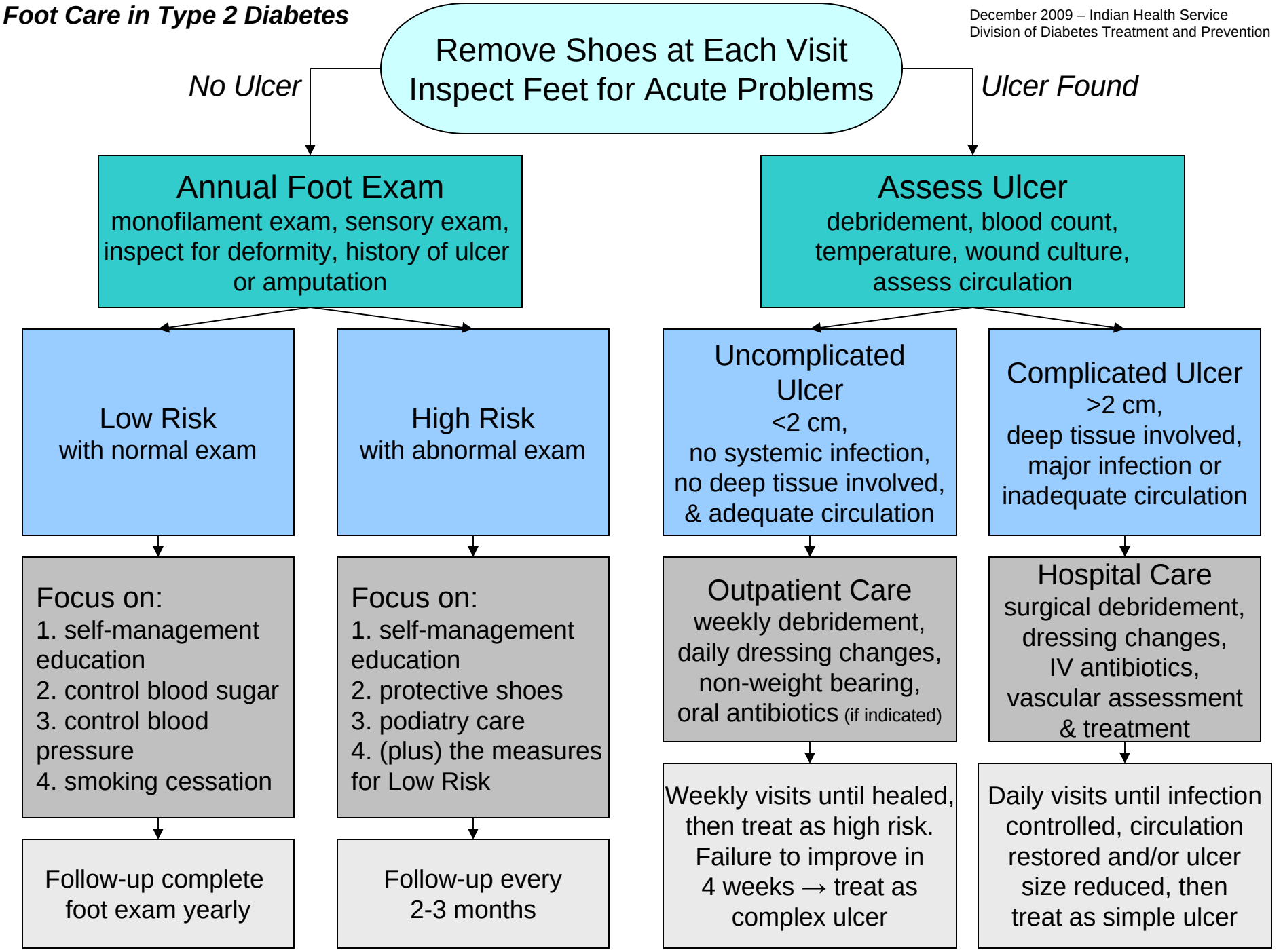
 

# Appendix C – Foot Care in Type 2 Diabetes

Evaluation and intervention for wounds is summarized using an algorithm.

***Foot Care in Type 2 Diabetes***

December 2009 – Indian Health Service
Division of Diabetes Treatment and Prevention



# Appendix D – Stepped Approach to Implementing IHS Best Practice for Diabetic Foot Care

The diagram illustrates details of the levels for diabetic foot care programs: Basic, Intermediate, and Comprehensive. Required elements are listed for each program level in the stepped approach to implementation of the foot care best practice.

# Stepped Approach to Implementing

# IHS Best Practice for Diabetic Foot Care

## Comprehensive Program

Includes all elements from the Intermediate Program, *plus the following:*

☐ Foot care team ☐ Wound healing specialist referrals

☐ Outreach services ☐ Tracking outcomes

## Intermediate Program

Includes all elements from the Basic Program, *plus the following:*

☐ Foot care clinical practice guidelines

☐ Podiatry and footwear services available

☐ Field health training ☐ Monitoring the care process

## Basic Program

☐ Diabetes team adopts standards of care ☐ DM registry in use

☐ Annual foot screening ☐ Risk-appropriate foot education

☐ Podiatry, footwear and field health referrals are being made

☐ Annual *IHS Diabetes Care and Outcomes Audit* in use

**Is Your Program Ready? –** "Do we have the following items in place?"

☐ Providers/community members perceive need for diabetic foot care

☐ Administrative support for CQI ☐ Functional IT support

☐ Access to foot care services ☐ Functional diabetes team